Research Proposal of the Thesis Titled

Exploring the Impact of Mandala Art on the Psychological Stress of Students of Design.

Submitted for the award of Degree of Doctor of Philosophy

By

SANIL BHAWLE

(Enrolment No. 202304003)

Under the Supervision of

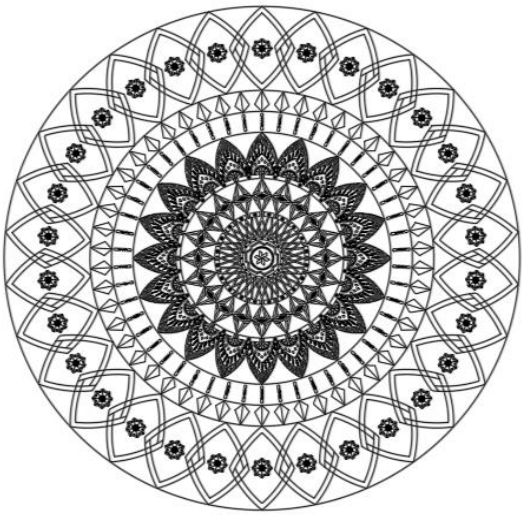
Dr. BHAVESH SHAH

Unitedworld School of Design

Karnavati University, Gandhinagar

(November, 2024)

Exploring the Impact of Mandala Art on the Psychological Stress of Students of Design.



1. Introduction

Ancient cultures gave us mandala art, a word that means "circle" in the ancient Sanskrit, language, an early language from India associated with Buddhism and Hinduism. Mandalas are intricate patterns formed by circles, squares, and triangles, reflecting the creator's view of the cosmos. Originally used as Buddhist devotional patterns, they symbolize wholeness, harmony, and the journey to self-discovery.

In today's world, mandala art has therapeutic benefits. Creating mandalas is seen as a mindful and meditative practice, known for reducing stress and enhancing emotional well-being. Artists express themselves using various tools like pencils, pens, paints, or digital methods, resulting in a beautiful masterpiece that reflects their inner thoughts and emotions.

mandala art goes beyond cultures and there are various types of mandala art, including floral, nature-inspired, and abstract designs. The selection of Geometric mandala art holds significance due to its inherent healing properties, precise Geometry, and clearly defined patterns. The symmetrical and repetitive nature of geometric mandalas enhances concentration and provides a meditative outlet, making them into an effective tool for reducing psychological stress while design students continue to work on their artistic endeavours.

Design is changing quickly by using new technology and Artificial Intelligence. Designers often face psychological challenges, feeling overwhelmed by the competitive nature of the field. The pressure to excel and meet the complex demands of creative decoration can be intense.

The design is more than just creativity; it involves enduring challenges and the complexity of lifestyles. Technology advances require skilled and creative people in the design industry. It involves competition for business expansion as well. Implementing mandala art, which has concentric patterns and harmonic balance, will improve designers' focus and patience. Such artistic practice is very useful for designers to strengthen their creative skills and is also necessary for success in this skilful, demanding field.

in the academic designing journey, it is important to manage stress and keep patience to get complete with the regular academic work, especially when it requires a creative skills and technical precision. In the field of design, Designers are expected to manage various projects with artistic appeal and tackle problematic obstacles. This is important because the design world require a challenging action between the aesthetics and functionality. Considering this challenging appearance, students require the perception of control in their academic requirement.

This study examines how geometric mandala art participation has change by involving students in creating mandala art and how it affects designer students to control their psychological stress. Geometric mandala art is known for its intricate pattern and detail study of symbolism, which serve as a creative practise that connect the artistic appearance and mindfulness for an individual. As design education emphasizes the need of flexibility, creative problem solving and perception of space, making geometric mandala art a valuable tool to improve these skills while reducing stress.

2. Problem statement

While many research focus on students' psychological well-being, there is a research gap in understanding how design student can control stress. The purpose of this research is to explore geometric mandala art and how it helps designing students understand design elements while also helping them to reduce stress. For students, who are unfamiliar with the art and find it difficult, geometric mandala art can become a useful practise to cope with academic challenges and reduce stress effectively.

3. Aim

To introduce mandala art to students of design as a potential means of reducing their stress of power while easing academic pressure. This study examines how interacting with Geometric mandala art in the learning environment benefits students in managing stress, overcoming challenges and generally enhancing their mental health.

4. Scope of study

1. The scope of this study aims to investigate the impact of mandala art on the psychological Stress of control among students of design.
2. This study will explore the fundamental understanding of the elements and motifs in mandala art.
3. The study investigates whether geometric mandala art helps students cope with stress and design thinking in the middle of their design studies challenges comprising tight deadlines, complex projects, and a mixture of creativity and technical requirements.
4. The research will explore the potential psychological and intellectual benefits that Geometric mandala art creation might offer, contributing to the well-being of design students. The study will be conducted within a defined timeframe and will focus on a specific group of students of design from selected educational institutions.

5. Question for literature review

1. What literature are available to help people understand mandala art Grammar and pattern making in Geometric mandala art?
2. What literature are available to study various kinds of mandala art and is there findings that they reduce stress?
3. What literature are available to devise a workshop on Geometric mandala art?
4. What literature are available on how effectively undergraduate design students can reduce stress through the practice of geometric mandal art?

5.1 Motivation literature review

The literature review explores the impact of Mandala art on the psychological stress of design students, understanding its origin and therapeutic uses in many cultures. Mandala art a form of focus pattern, geometric, and symbolic design that has long been seen as a therapeutic tool in modern psychology and art therapy. It has been found that that it has the ability to improve a person's mental well-being and reduce stress.

Mandala art has an ancient history that goes to ancient Eastern religions like Buddhism and Hinduism. Nowadays, it is used in art therapy and education centres. According to research, drawing or colouring mandalas or just looking at them can help you feel less stressed and more calm. It also explores how mandala art helps to manage stress, especially for students facing academic pressure.

This literature review compiles research on the topic in order to comprehend how mandala art can be used to support mental health. It aims to show how the patterns and shapes in mandalas can be connected to ways of reducing stress, especially for students studying design. This study helps to identifies the gap in the existing research the research gap. That includes the need for more studies concentrating on the specific impacts of mandala art on student stress.

5.1.1 Literature review research question 1.

Q.1. What literature is available to help people understand mandala art Grammar and pattern making in Geometric mandala art?

- **Dokras, U. (2021).**

  The author in this book discusses Symbolism and Significance for Contemporary Design Education in India, the authors emphasize the undervaluation of traditional design knowledge, especially the mandala, in current design education. They argue that neglecting the rich principles from ancient Indian treatises has led to a substantial gap in awareness among academics and practitioners. The book advocates for a fundamental transformation in design education, proposing the integration of traditional philosophy and methods as a primary focus. By underscoring the importance of the vāstu purush mandala, the authors call for a holistic understanding of traditional design concepts, asserting that such knowledge can significantly enhance the critical history-theory and

context-relevance aspects of design education in India in a way that resonates with the human experience.

- **Kim, S. M. (2008).**

  The researcher looks at how pictures relate to their deeper meanings, focusing on Buddhist mandalas. The study wants to understand how these images show both what we can see and what we can't, and how people experience and appreciate them. The findings suggest that artists create mandalas with rich meanings, which often include hidden messages. The study asks whether these hidden meanings are symbols or something else. The researcher chose Buddhist mandalas because they have many interesting details and are often used in worship. However, there are still questions about how these pictures differ across various Buddhist cultures, how history has shaped them, and what people think about them today. Answering these questions will help us understand the connection between these pictures and their deeper meanings in Buddhist art.

- **Lara Petersen (2018)**

  The author discusses mandalas, quoting from Dakota elder's black Elk, emphasizing the cyclical nature of the world. The article retraces the history of mandalas starting from Asia, with a specific focus on Buddhism and Hinduism. Etymologically, the word "mandala" means a container of essence. They examine mandalas' role in meditation, especially in Hinduism and Buddhism, as well as their increased use in art therapy of psychology. For example, the dot in the middle denotes the start of a journey while the circle around them suggests the vastness and cyclicality of life. The article recognizes that modern mandalas can be symbolic for their aesthetic purposes rather than religious ones. It explores specific symbols such as triangles and the lotus flower. The author suggested to use of mandala art as a way of practicing meditation, which can help an individual to reduce stress and make it easier to find more about yourself. Thus, the article gives a short understanding of mandalas, considering many spiritual, and historical perspective as well as their beauty.

- **Sudha Prathikanti, MD (2020)**

  In this work, Prathikanti study mandala art therapy as a powerful way to achieve self-centering and control emotion. The study also shows how mandala is been use for healing and gaining individual understanding through their culture and historical significance. The author provides a detailed study of the creative process behind making a mandala and discusses how mandala-making can help people who are having emotional problems. Through structured exercises and guided observation Prathikanti shows how using mandalas can improve mindfulness, lower stress, and make you more self-aware. So, the comprehensive study provides both an introduction to mandala therapy and a practical guide for practitioners. It can also be used as a tool by a therapist who wants to use these techniques in their work.

- **Ashmi Sheth (2021)**

  In this work, Sheth examines the use of mandalas as a way of practice for self-expression and healing. The author, an artist and 3D animator, talks about how making mandala can help individual to go of its feeling and think about their own life. Sheth talks about how practicing mandala art can change people's lives by being in a therapeutic practice environment. She also says practicing mandala art can help people to become more thoughtful as well as control and improve their emotional well-being. This book guides how to create mandalas, encouraging individuals to explore their inner art creativity by practicing mandala art as a tool of self-discovery and healing. Sheth gives valuable strategies on how to practice mandala art in personal and clinical environments by combining artistic understanding with therapeutic ideas.

- **Aditya Kumar Singh, Vinay Mohan Das, Yogesh Kumar Garg, Mohammad Arif Kamal (2021)**

  The researchers explore the fundamental importance of Buddhist artwork that connects the physical world of images with higher metaphysics. The study emphasizes the experiential and vital aspects of these dimensions and how they rise during the creative process about aesthetic appreciation. The distinction that is considered critical here relates to non-discursive meanings based on artists' inspiration and discursive meanings which provoke a more thorough investigation into the symbolic or metaphorical nature of those meanings. The skilful selection justifies the use of the Buddhist mandalas in different contexts such as bodily chakras and ritual ceremonies. Researchers are

narrowing their approach to mandalas only to give a detailed discussion on some aspects of Buddhist visual culture thus enriching our knowledge of some metaphysical dimensions in the Buddhist visual culture and contributing immensely in the greater literature of this study.

- **William Van Gordon, Edo Shonin, & Javier Garcia-Campayo (2015)**

  The writers of this article use ideas from mindfulness and meditation to look at the idea of mandalas as a way to show the present moment. These people talk about how mandalas can help people become more grounded in the present moment and more aware of their thoughts and feelings. The study demonstrates how drawing mandalas can be therapeutic by reducing stress and lowering the difficulty in controlling emotions. The authors of this book contribute importantly to art therapy as well as psychological research by demonstrating how modern psychiatric practices can be applied with mandala art, thus helping people become more mindful and present.

- **Petra Vidović, Stjepko Rupčić (2023)**

  This study aims to discover how mandala patterns in nature can inspire preschoolers in self-expression through art. In this way, the authors assert how natural mandala patterns such as snowflakes, flowers, and shells can nurture the creativity and intuitive awareness of young learners. Through observational studies and creative workshops, the researchers have demonstrated the patterns to inspire the kids to explore their artistic skills and feel more connected to the surroundings. The findings suggested that activities based on mandalas can be used in early childhood education to promote kids' mental and emotional development, encouraging mindfulness and expression through art.

- **Walker, C.W. (1994).**

  In this literature, Craig Weston Walker focuses on how writers like Jorge Luis Borges, Gabriel Garcia Marquez, and Toni Morrison apply mandalas, symbols, and patterns in writing. For him, the mandala remains a symbol representing unity, indicating how this follows the same scale in which diverse forces within human experience are almost balanced. Walker recourse to the works of Carl Jung explains how these writers come to author circular stories, important characters that mirror human complexity, and mind and emotions. The research allows the reader to consider thinking deeper into how all

these symbols may connect to shared human experiences in new ways in the appreciation of literature.

- **Guo-Hui Xie, Qi Wang (2021)**

  The researchers in this study looked carefully at how colouring mandalas, the only circular drawing of unique interest that comes from Eastern practices, can help people feel better. They explored its potential in alleviating stress, anxiety, and feeling sad. They discussed three ways of doing mandalas in accomplishing a good feeling: thinking about them, drawing them, and colouring them. They focused on colouring because it is something that anyone can do. They even provided a simple five-step guide as to how to do it. According to the study, these mandalas, that are believed to have been part of Eastern religions for hundreds of years, can indeed be a secret weapon to fight stress and sadness.

- **Jung, C.G. (1972).**

  Mandala symbolism (R.F.C. Hull, Trans.)

  This translated work delves into intricate symbolism through mandalas, examining their meaning in both cultural and psychological terms. Emphasized here by the author is the meaning of a mandala as wholeness and oneness and connecting the conscious and unconscious minds. Indeed, based on Carl Jung's theories, the text emphasizes the way that mandalas help in growing self-awareness by giving a language to ambiguous emotions. Hence, this discussion will relate mandalas with distinct kinds and how they can symbolize both individual psychological processes as well as cultural narratives. Hence, the work becomes a source of deeper meaning embedded in a mandala design, becoming an essential component of pattern-making research in art therapy or personal expression.

5.1.2 Literature review research question 2.

Q.2. What literature are available to study various kinds of mandala art and is there findings that they reduce stress?

- **Anastasia Babouchkina and Steven J Robbins (2015)**

  The author in this book speaks about how drawing mandalas, which are circular artworks, can help your mental and emotional well-being. The speaker narrates how for a long time, the use of mandalas in various religions and cultures. It aids to make individuals to perceive things more creatively, calmly, and conclusively. Therapists and other professionals can utilize the exercises in the book to aid their clients. These exercises prove that mandalas can be a very useful tool for personal growth and stress relief. It is, in general, a good resource for people who want to use mandalas for self-care or therapy.

- **Susan Buchalter (2012)**

  The author in this book speaks about how drawing mandalas, which are circular artworks, can help your mental and emotional well-being. The speaker narrates how for a long time, the use of mandalas in various religions and cultures. It aids to make individuals to perceive things more creatively, calmly, and conclusively. Therapists and other professionals can utilize the exercises in the book to aid their clients. These exercises prove that mandalas can be a very useful tool for personal growth and stress relief. It is, in general, a good resource for people who want to use mandalas for self-care or therapy.

- **Nur Haziyah Amni Raimaini & Ross Azura Zahit (2015)**

  Raimaini and Zahit conducted a study on the mandala art therapy form to discuss its effectiveness in improving emotional healing and stress levels. The authors stress that creating mandalas is a method of meditative practice that promotes mindfulness and thus self-expression. Their review revealed that mandala art therapy is helpful for those individuals who are dealing with different psychological problems, and it offers them a creative outlet in enhancing their well-being as a whole. The study underlines the potential that a mandala offers in being a priceless therapeutic activity, with access making the possibility more than noteworthy.

- **Hasnida & Amalia Meutia (2017)**

  In their study, Hasnida and Meutia investigate the effectiveness of mandala therapy as a coping mechanism for stress. The authors outline how creative engagement in mandala creation enhances mindfulness that leads to emotional expression, which are all avenues for improved stress management. The findings were that significant reductions in stress levels along with enhanced coping strategies were made by participants who practiced mandala therapy. This empirical study demonstrates the ability of the therapy mandala to be applied therapeutically for people suffering from stress, considering it is accessible and psychologically impacted enough to be embraced in stress management programs.

- **Kathleen Quinn (2018)**

  This paper's author reflects upon the contribution of mandalas in art by using her experience in teaching, therapy, and education as a nurse. Mandala art is used as a tool to make people think about themselves and grow. The author narrates the history of mandala art and how it was used by a psychologist named Jung and how it is still useful today in a variety of areas like medicine and education. Quinn wants to demonstrate how the combination of mandala art and reflective journaling may lead to people becoming more aware, taking care of themselves, and in all ways growing personally and professionally. Another perspective brought by the author is the process of creating art and writing about it as useful steps in understanding oneself and experiences. Quinn demonstrates how this works through her art and thoughts. It simply puts down that using mandalas in journaling may be a helpful tool for personal and professional development.

- **Juanjuan Li, Bo Wu (2020)**

  The researcher explores how drawing mandalas can be applied to educate college students on mental health. Of the previous research studies, they determined that drawing mandalas helps people reduce stress, manage and regulate their emotions, and develop good mental health. According to the researchers, drawing mandalas has proven effective and more appealing to students in various settings: in classes, group counselling, or even one-on-one sessions. They believe that this approach is so simple and doesn't require much material, and hence, it is possible to teach mental health in colleges. The authors emphasize how beneficial it is to draw mandalas: how it helps

the students accept themselves and communicate better and the long-lasting positive effects of mandala drawing on mental health. At the end, they concur that college students should continue to use mandala drawing as a means of learning about mental health.

- **Roni Apriyana, Efri Widianti, & Rizki Muliani (2020)**

The researcher in their study investigates the impact of mandala pattern coloring therapy on reducing academic stress among first-grade nursing students. The authors implement a structured coloring intervention, focusing on how engaging with mandala patterns can alleviate stress related to academic pressures. Findings indicate that students who participated in the coloring therapy experienced significant reductions in their academic stress levels. The study underscores the therapeutic benefits of mandala coloring as a simple yet effective tool for enhancing student well-being and managing academic stress, advocating for its integration into nursing education programs.

- **Sally Schofield (2019)**

The researcher contextualizes the research on Group Art therapy and aesthetic experiences of difference and belonging within existing scholarly discourse. Prior studies have highlighted the efficacy of art therapy in fostering self-expression, emotional well-being, and interpersonal connections. The exploration of diversity and belonging within a group setting aligns with broader discussions on the social dimensions of art therapy. Existing literature also underscores the role of aesthetic experiences in shaping identity and community dynamics. However, a focused examination of how Group Art therapy specifically contributes to navigating and celebrating differences while fostering a Stress of belonging remains underexplored. This research aims to build upon and contribute to the current body of knowledge by delving deeper into the nuanced interplay between art therapy, aesthetics, and social inclusivity within a group context.

- **Khushbu Shah and Pradeep Borkar (2021)**

In their study, Shah and Borkar examine how mandala art affects physiotherapy undergraduate psychological well-being between the ages of 18 and 22. Conducted at Dr. A.P.J. Abdul Kalam College of Physiotherapy, the study seeks to evaluate how building mandalas affects emotional states and stress levels among young people in a

difficult academic environment. Participants in the program the authors set in place regularly mandala creation sessions examined changes in their mental health using self-reported data and standardized psychological evaluations. Results show that among the pupils, mandala painting greatly lowers tension and helps them to be relaxed and attentive. The results of Shah and Borkar imply that mandala art therapy can be a useful non-pharmacological approach to improve well-being and coping mechanisms in young people, especially those managing academic stress.

- **T. M. Sneha & Dr. Patrick Jude Lucas (2021)**

  In their study, Sneha and Lucas explore the use of mandala art therapy as an intervention for university students facing depression, anxiety, and stress. The researchers implemented a structured mandala creation program aimed at enhancing mindfulness and emotional expression. Findings showed significant reductions in depression and anxiety symptoms, along with decreased stress levels among participants. The study also highlighted improvements in resilience, suggesting that engaging in mandala art not only alleviates negative emotional states but also fosters better coping strategies. The authors advocate for integrating mandala art.

- **Milan Shakya (2017)**

  The author considers the mandala, which is Sanskrit for cosmic disc or wheel, central to Orient art, yoga, and Tantrik. The wheel of the sun is a Vedic myth that is reiterated in Buddhism as the Dharma Chakra. Chakra is an important concept of Yoga and Tantra that represent spiritual centres in the human body. mandala symbolizes a sacred female deity and her palace in Nepal which is considered as sacred with magical power, and determines the layout of temples. The elements of mandala — Bindu, Nabhi, and Chakra are associated with the subtle body's energy points and the creative energy itself. By discussing its importance in mandala practices in Kathmandu Valley, Shakya sees it as an orbit of consciousness of the Nepalese people, especially during Mhapuja ceremony.

- **Elinor Ulman (2016)**

  The Author of this book talks about how we can use art materials to help people feel better. They say you can use art to say things without talking and even use the process of making art as therapy itself. The term "Art therapy" started in 1942, and the author talks about its history, mentioning pioneers like Adrian Hill in the UK and Margaret

Naumburg in the US. They also talk about different ways to use art, like using it quickly in therapy, and why the values of art are important. The author also talks about how art therapy isn't just for hospitals but can be used in many different places where people need help. As you read, you'll see how the writer points out that the line between Art therapy and other ways of using art is a bit unclear, showing us how this approach works in different areas and helps lots of different people.

- **Chaterine Angellim, Monty P. Satiadarma, Untung Subroto (2020)**

  The researchers wanted to see if drawing mandalas could help college students who were stressed about exams. They worked with nine female students in Jakarta, and these students drew mandalas for six weeks. The researchers asked the students to take a test about how anxious they felt before and after the drawing sessions. What they found was interesting - seven out of nine students felt better and less stressed after drawing the special circular mandalas. One student felt more stressed, and one didn't feel a change. So, it looks like drawing mandalas might be a good way for many students to feel less worried about exams. However, the researchers mentioned that their study had some limits, like having a small group of students. They suggested doing more research to be sure about these findings

- **Gioia Chilton (2013).**

  The researcher examines how the concept of "flow" may be applied in art therapy. Mihaly Csíkszentmihályi defines flow as total focus and engagement. Chilton adds that experiencing flow can promote creativity and improve well-being, and that art therapists can assist clients in achieving this condition while creating art. The paper contains research on flow's characteristics and how it works in the brain, concluding that art therapy is an excellent technique to help people achieve flow, which can have a good impact on their feelings and behaviour. While this review gives important information regarding flow and art therapy, further research is needed to determine how to employ flow effectively in treatment sessions.

5.1.3 Literature review research question 3.

Q.3. What literature are available to devise a workshop on Geometric mandala art?

- **Chemi, T. (2016)**

  This chapter explores the experience of flow that professional artists go through during their creation and learning process. The results form part of a larger study into artistic creation. The study focuses on how known artists approach their craft. The research took a qualitative approach to collect a review story from 22 successful professional artists. When these artists talk about their creative processes, they also often describe a deep state of focus and quiet, which they portrayed as somehow linked to flow. For them, flow is not the result of the creative process; it is an ingredient that is a part of it. It inspires and aids and guides their creativity so that they are entirely focused on the activity.

- **Chen, Hao, Liu, Chao, Zhang, Ayuan, Lu, Wen-Qian, Wu, Kan, and Chiou, Wen-Ko. (2024)**

  This study explores how young and experienced artists create art and how their methods relate with the concept of flow, this is described as being highly attentive and engaged. The researchers interviewed 28 artists and divided them into two groups: 14 learning artists and 14 artists who already had the skill. They found out that inexperienced artists tend to make rather random changes to their work, which causes them to have difficulty maintaining a flow state. Experienced artists, however, used what they had learned to accomplish more rational and careful moves according to their artistic imagination. This allowed them to enter and remain in the flow more easily. This would imply that the more artists master their craft, the more artistically absorbed they will become, thereby increasing the chances of eventually achieving flow and producing an abundance of art.

- **Department of Psychology and Counselling Cell (2021)**

  As a part of Mental Health Week, the Department of Psychology and Counselling Cell organized a three-day workshop on Mandala Art Therapy to talk about mindfulness and well-being. On day three, "Mindful Moments" is centered on the Mandala Art Therapy. The session introduced mandalas as a mindfulness practice for therapeutic benefits. Structure of the workshop: Mindfulness, or rather, awareness Day 1 introduces

mindfulness and raises self-awareness through guided meditation and discussion. Day 2 focused on emotional regulation using expressive writing and group reflection. On Day 3, participants made mandalas to express their emotions and relax. Facilitators shared explanations about the symbolism used for shapes and colors by mandala artists and challenged participants to connect this symbolism to their experiences and emotions. Participants stated that they had lower stress and more clarity and calm following the session. Organizers recommended that mindfulness activities be added to future workshops in order to sustain such effects.

- **Patti Gail Henderson (2016)**

  Patti Gail Henderson wrote in her dissertation about an idea for a three-day workshop that would explore the healing power of art by making mandalas that are filled with love and joy. The structured art-making exercise was supposed to help people to connect with their feelings and to their emotional health. On the first day, people learned about mandalas and were shown how to make ones that spoke to the message of self-love and inner peace. On Day 2, people reflected on the emotion of joy and represented it with bright colors and flowing patterns in their mandalas. Final Day 3: There were group discussions and reflections during the last day, at which people could share their work as well as talk about the emotional journey they took through the process. Surveys given both before and after the workshop as well as participant reflections showed that attending the workshop helped in letting go of emotions, positivity, and a greater level of self-awareness. A study suggested continuous sessions to maintain these positive effects and learn even more about how making mandalas can be used for emotional healing.

- **Małgorzata Krzysztofik and Piotr Zbróg (2022)**

  The researchers from the University of Jan Kochanowski in Kielce developed a three-day workshop to enhance university educators' skills in evaluating art. The primary objective of the workshop was to give teachers frameworks and tools for judging art in school, balancing technical aspects with personal interpretation. The workshop format was: The first day covered theoretical foundations, including art judging standards. Day 2 hands-on activities allowed participants to evaluate art using these frameworks and discuss their issues. Day 3 reflective discussions examined biases and sought ways to make art evaluation fair and consistent. Workshop participants' feedback and self-

assessment surveys were used for evaluation. Participants gained confidence in their art evaluation skills and a better understanding of subjective and objective factors. The study recommended adding peer-review and case studies to workshops to improve skills.

- **Maryellen McAlevey (2014)**

  The researcher studied Mandalas and Wellness Wheels used with people who have serious mental illness and found a promising way for art to help with mental health. Previous studies indicated that the process of making and thinking about Mandalas and Wellness Wheels is therapeutic, which helped people with serious mental health problems think about themselves and then express their feelings, and that process improves their general health. However, the studies leave a significant gap in what has been determined about how these treatments work to make things better. The aim of this current study is to fill in this gap by looking further into their experiences more profoundly. This can depict how Mandalas and Wellness Wheels can help people suffering from serious mental illness to achieve better mental health and overall well-being.

- **Daichi Shimizu, Ibuki Yomogida, Wang Shijun, and Takeshi Okada (2021)**

  The researcher investigates how such a yearly running online art program for engineers can help them to develop creativity. This framework will focus on four key points: diverse items and environments to stimulate creativity, other people's art is a source of ideas, exploring creative processes, and inner motivation increasing while creating an environment that lowers creativity anxiety. The training made a big difference in how creative, open, and thought outside of the box the participants were. It demonstrated well how art workshops can work in online settings while dealing with problems such as providing each student comments individually. Such study gives us useful information about how to encourage creativity, specifically based on a methodical approach that can be used both in STEAM (science, technology, engineering, and mathematics) schooling and professional growth.

- **Tae Hoo Kim, Emelia Ong Ian Li (2018)**

  The study explains the background of the research on mandala art therapy for individuals with autism spectrum disorder (ASD) ASD. According to previous studies,

art therapy has proved to assist most individuals with ASD to open up their feelings, communicate, and live a better life in general. Nevertheless, a significant gap in the study exists regarding mandala art therapy in this particular context. This study aims to add to the facts of art therapy for people with ASD by looking directly at the therapeutic potential of making mandalas. This study attempts to look at and piece together relevant literature for the purpose of understanding what makes mandala art therapy special and how well it fares in meeting the specific needs of people on the autism spectrum

.5.1.4 Literature review research question 4.

Q.4. What literature are available on how effectively undergraduate design students can reduce stress through the practice of geometric mandal art?

- **Alexander Chatzigeorgiou, Nikolaos Tsantalis, Ignatios Deligiannis (2007)**

  The researcher wanted to see how well students in a postgraduate software engineering class grasped the concept of design patterns. They asked students to create two versions of a computer program: one without using design patterns (full of issues), and another with design patterns (supposed to be better). The goal was to figure out if students liked using design patterns if they could link design problems with the right patterns, and how well they understood the impact of patterns on software metrics. The study aimed to find ways to make teaching design patterns better. The researcher focused on what students think and understand about design patterns, providing a different angle compared to studies on teaching methods and the impact of design patterns on software maintenance. The paper concludes with recommendations for additional research and strategies to enhance the quality of courses in this field

- **Dr. Abeer A Alawad (2014)**

  The researcher aims to understand the stress that Interior Design and Furniture students at King Abdulaziz University face. The study explores the specific sources of stress for these students and whether the nature of their stress changes with the academic year. The findings point to academic factors, especially having too much academic work, as the main stressors. Students also struggle with finding suitable places to work and store their materials, adding to their stress. Interestingly, the study shows that stress levels don't significantly differ among students in different years. The paper suggests that

making changes to the curriculum and improving the overall environment for students could be key to reducing stress. It highlights the importance of universities being aware of their students' stress levels and taking action to support their well-being. However, the study is aware of its limitations, though, including its small sample size and dependence on self-reported data. Despite these drawbacks, the study provides insightful information that could improve interior design and furniture students' overall experience.

- **Jennifer L. Lapum, Karen Owusu, Andy N. Tan, Simran Rattan, Phung P.N. Nguyen, Einav T. Simoni, Charlotte T. Lee (2020)**

  The researchers wanted to investigate how effective a mandala-making session would be in helping nursing students understand stress and coping theory. The study was conducted by Ryerson University's Daphne Cockwell School of Nursing. It investigated whether making mandalas can help children understand those ideas as well. Pre- and post-workshop surveys were used to collect data that measured theoretical understanding. In addition, the students wrote about their experiences. Mandala helped the students understand stress and coping techniques through imagery and connections. The unconventional, hands-on character of the mandalas allowed students to relate abstract ideas to stressful situations in their everyday lives, according to academics. The paper recommended using this innovative method of teaching in nursing classes in helping to enable the student to understand difficult theoretical frameworks. It also recommended further study to improve the workshop module based on participant feedback.

- **Liu C, Chen H, Liu C-Y, Lin R-T and Chiou W-K (2020)**

  The study looked at the ancient art of drawing mandalas, originally practiced in Tibetan Buddhism and later developed by Carl Gustav Jung. Unlike the common practice of how drawing mandalas can reduce bad feelings such as depression and anxiety, this study tried to determine how they could improve one's health in general. 76 students from Chang Gung University were engaged with this colorful experiment, which included individual mandala drawing (IMD) and cooperative mandala drawing (CMD). It was indicated that both CMD and IMD elevated participants' spirituality considerably, but CMD led to more maximal subjective well-being, especially positive affect. Drawing mandalas, in particular CMD, can be considered a simple and effortless

activity toward increasing happiness, as evidenced by the integration of mindfulness, spirituality, and SWB in the study.

- **Kristine Lorentzsen (2019)**

  The researcher explored how building mandalas as an answering art activity might help school children focus, hold, and explore their feelings. The study aimed to verify that a workshop program that utilized mandalas to aid participants in processing and reflecting on their experience was effective. It kept its focus on therapeutic and educationally orientated usages. In the workshop at Lesley University, the participants created mandalas to answer self- and emotion-related questions. Data was derived from workshop reflections, post-workshop surveys, and led group talks. Creating mandalas made people feel safe in control of their emotions, and therefore connect with inner feelings. A mandala improves self-awareness and emotional strength. The method should be used in education and therapy. Based on participant feedback, the study suggested making incremental changes to the module of the workshop over time, thereby increasing the utility and flexibility.

- **Audrey C. Tolouian (2018)**

  The study aims to evaluate the effective use of mandala for nursing students; they were tested for their ability to teach nursing students self-awareness, intelligent thinking, and stress management. It was tried to see if making mandalas is helping nursing students to learn difficult concepts and are they becoming emotionally strong. In workshops, students had made mandalas as a medium of relaxation and reflection, as well as they discuss about how their art related to stress, self-care, and kindness. According to reflective journals and feedback forms, making mandala help pupils manage stress and learn theoretical knowledge in a visual and symbolic way. The study conclude that mandala serves a pedagogical tool in nursing education and in-cooperating it into the curriculum to enhance learning.

- **Sawako Yokochi and Takeshi Okada (2005)**

  The research aims to explore how the method of a professional artist changes during the creative process to understand the art-making and their interaction with the creative expertise. The workshop module is studied and been validated on reflective practice and adaptive processes modified to enhance creativity. The modifications and decisions to

their work have been made by the experienced artists as they were invited to participate in the creative process. The data is collected by Video-recording, in-depth interviews, and through artist reflections. The finding shows that experienced artists were flexible and adaptable, altering their plans based on new ideas and contextual inputs. The study concluded that the workshop was successful emphasizing the importance of process reflection and flexibility are for improving creativity. There was a suggestion in order to help students become more self-aware and improve their creative adaptation skills by expanding the module of the workshop by interacting with discussions and peer feedback sessions.

6. Research Gap

From the literature review, the following 4 research gaps are noticed

1. There is need to categorically structure types of mandala arts and its elements of pattern making.
2. There is a need to conduct the research that connects various forms of mandala art and their effectiveness in stress reduction.
3. There is a need to study the practicing methods of mandala art to reduce stress levels for students of design.
4. There is a need for the compilation of a mandala art pattern-making booklet.

7. Need of Research

Based on the research gaps, several important needs have been identified. Initially, there is a need to compile and organize the elements and motif that make up the design principles for creating mandala art. It is also important to explore how different types of mandala art help reduce stress, to get better understand which types are most effective. Additionally, to help design students manage stress. It is also important to examine how practicing mandala art can bring relief during a three-day workshop. Creating mandalas requires focused learning and hands-on experience, but design students have demanding schedules and must manage their time well. More than three days may result in tiredness and decreased recollection, but a three-day program allows for effective learning, feedback, and skill development in a practicable timeframe. Lastly, there is a need to develop a detailed handbook that guides individuals in making mandala art patterns.

8. Formulation of research questions based on research Gaps.

1. What are the different types of mandala art and their design elements?
2. What is the literature that has been used to study various forms of mandala art and their effectiveness in reducing stress?
3. Is there any standard geometric mandala art workshop conducted anywhere in the world?
4. Does the practice of geometric mandala art reduce stress levels among students of designs?

9. Objectives

1. To study, and systematically organize mandala art and understand the grammar of pattern making in geometric mandala art.
2. To study different forms of mandala art creations and infer if they were devised to reduce stress.
3. To devise a three-day workshop.
4. To conduct the workshop to validate the workshop module.

10. Methodology

A mixed-method approach will be used to investigate the influence of mandala art on the reduction of tension among design students by employing Flow Theory. By integrating both quantitative and qualitative data, the mixed-method approach helps with a thorough comprehension. The research includes a three-day workshop in which participants participate in the creation of mandala art with the objective of promoting a state of "flow"—a profound, concentrated immersion in the activity. Surveys, interviews, and observations will be implemented to assess fluctuations in stress levels prior to and subsequent to the workshop, as well as to investigate the participants' experiences with flow. This method ensures a thorough examination of how mandala art promotes stress reduction by inducing a sense of flow in design students.

10.1 Methodology for Objective 1.

The objective would be accomplished by reviewing the literature and analysing the intricate design elements and mandala art creation principle

10.2 Methodology for Objective 2.

This goal will be achieved through reviewing existing research on the mandala art form and its stress-reduction benefits. The literature study will concentrate on studies that look into the psychological and therapeutic advantages of mandala art, specifically how it helps to reduce stress among design students. The goal is to understand the specific ways in which mandala art might help with stress relief, such as by promoting a meditative or flow state that improves attention and relaxation.

10.3 Methodology for Objective 3.

Intervening workshop participants will be introduced to mandala art creation through workshops. They will be encouraged to create mandala art regularly over a fixed period, allowing for practice and exposure to the activity.

After the intervention period of the workshop, participants will complete the psychological control questionnaire survey. Any changes in their perceived Stress of control will be analysed quantitatively using appropriate statistical methods.

10.4 Methodology for Objective 4.

An analysis of design students' psychological well-being and their stress-reduction practices will lead to the creation of a practice book for mandala art patterning.

10.5 Research Methodology

10.5.1 Research Process

- Split design students into two groups: one does mandala art sessions, and the other doesn't.
- This helps compare how mandala art impacts their Stress of control.

10.5.2 Sampling

- A purposive sampling technique will be used to select a representative sample of design students.
- The sample size will be determined based on statistical considerations to ensure adequate representation and statistical power.

10.5.3 Data Collection

- Quantitative Phase:
    1. Pre-test Assessment: Before engaging in a workshop on geometric mandala art creation, participants will complete a standardized psychological Stress of control questionnaire. This will establish a baseline measure of their perceived control levels.
    2. Intervention: In the workshop, participants will then be introduced to mandala art creation through workshops or guided sessions. They will be encouraged to create Geometric mandala art regularly over a set period, allowing for practice and exposure to the activity.
    3. Post-test Assessment: After the intervention period of the workshop, participants will complete the psychological Stress of control questionnaire again. Any changes in their perceived Stress of control will be analysed quantitatively using appropriate statistical methods.

- Qualitative Phase:
    1. Participants will be divided into smaller groups for in-depth, semi-structured interviews.
    2. These interviews will go into more detail about participants' mandala art experiences, investigating its impact on their Stress of control and any related psychological changes they've noticed.

10.5.4 Analysis of Results

- **Quantitative Data:** Quantitative data from the questionnaires will be analysed statistically to determine any significant changes in the psychological Stress of control scores before and after the intervention.

  Tools - Statistical software (e.g., SPSS, Excel)

1. Descriptive statistics to summarize survey data.
2. Paired t-tests to compare pre-and post-survey scores within groups.
3. Independent t-tests to compare scores between the mandala art group and the control group.

- **Qualitative Data:** Conceptual examination will be applied to the qualitative data gathered from the interviews. Common themes and patterns related to the impact of mandala art on psychological Stress of control will be identified and interpreted.

  Tool: Qualitative analysis software (e.g., NVivo, Dedoose) for:

  1. Content analysis to identify recurring themes related to the psychological stress of control.
  2. In-depth exploration of gentle knowledge from students' reflections and expressions.

10.5.5 Hypothesis testing

- Using of statistical tests, comparing before-and-after survey results or data.
- Testing a significant performance between the mandala art group and the others.

10.5.6 Final Documentation

11. Tentative Output

The following are the Tentative outputs:

11.1 Output 1 from Objective 1

Compilation of reference booklet on the types of Mandala Arts and its constituting motif components.

11.2 Output 2 from Objective 2

Analyze the impact of various mandala art forms in the reduction of stress.

11.3 Output 3 from Objective 3

Device and formulate the components of the stress relieving workshop.

11.4 Output 4 from Objective 4

The impact of this workshop on reducing stress levels will be examined.

12. Motivation

Concerns about student well-being arise due to the substantial practical work and the pressure to meet deadlines. Balancing their personal obligations, academic responsibilities, and study obstacles, students frequently feel overburdened which increases their stress. This study intends to bring about this transformation by utilizing mandala art as a practice and its beneficial effects on stress reduction. The psychological health of our students could be significantly improved by their understanding of how these behaviours can affect a profession in design.

13. Hypothesis

- H0 – Null Hypothesis

  There is no significant difference in the psychological stress of control between design students who engage with geometric mandala art and those who do not.

- H1 – Alternative Hypothesis

  There is positive significant difference in the psychological Stress of control between design students who engage with geometric mandala art and those who do not.

14. Thesis structure flow chart

Topic 1 - Mandala Art	**Topic 2 - Mandala Art Forms for Stress Reduction.**	**Topic 3 - Introduction to Workshop.**	**Topic 4 -Geometric Mandala Art Practice**
Question 1 for literature review - What literature are available to help people understand mandala art Grammar and pattern making in Geometric mandala art?	Question 2 for literature review - What literature are available to study various kinds of mandala art and is there findings that they reduce stress?	Question 3 for literature review - What literature are available to devise a workshop on Geometric mandala art?	Question 4 for literature review - What literature are available on how effectively undergraduate design students can reduce stress through the practice of geometric mandal art?

Research gap 1 from LR - There is need to categorically structure types of mandala arts and its elements of pattern making.	Research gap 2 from LR - There is a need to conduct the research that connects various forms of mandala art and their effectiveness in stress reduction.	Research gap 3 from LR - There is a need to study the practicing methods of mandala art to reduce stress levels for students of design.	Research gap 4 from LR - There is a need for the compilation of a mandala art pattern-making booklet.
Research question 1 - What are the elements and principles of Mandala art?	Research question 2 - How well does the different kind of mandala art help reduce stress?	Research question 3 - How can we structure a mandala art practice method to help design students manage stress?	Research question 4 - What are the key elements and principles for creating a mandala art pattern booklet
Research objective 1 - To study, and systematically organize mandala art and understand the grammar of pattern making in geometric mandala art.	Research objective 2 -To study different forms of mandala art creations and infer if they were devised to reduce stress.	Research objective 3 -To devise a three-day workshop.	Research objective 4 -To conduct the workshop to validate the workshop module
Hypothesis for objective 1	**Hypothesis for objective 2**	**Hypothesis for objective 3**	**Hypothesis for objective 4**
H0 – Null Hypothesis	**H0 – Null Hypothesis**	**H0 – Null Hypothesis**	**H0 – Null Hypothesis**
There is no significant relationship between understanding the elements and principles of Mandala art and the skill to understand its design structure.	There is no significant relationship between the different types of mandala art and reducing stress.	There is no need to devise a workshop on Geometric Mandala Art	There is no significant change in perceived stress control among design students who participate in Geometric Mandala art practice workshops.
Ha – Alternative Hypothesis	**Ha – Alternative Hypothesis**	**Ha – Alternative Hypothesis**	**Ha – Alternative Hypothesis**
There is positive significant relationship between understanding the elements and principles of Mandala art and the	There is significant relationship between the different types of mandala art and reducing stress.	There is a need to devise a workshop on Geometric Mandala Art	There is significantly improve in perceived stress control among design students who participate in Geometric Mandala art practice workshops.

skill to understand its design structure			
Methodology for objective 1 - would be accomplished by reviewing the literature and analysing the intricate design elements and Mandala art creation principle.	Methodology for objective 2 - would be achieved by reviewing existing research on mandala art and how it can help reduce stress. The study will focus on how mandala art helps reduce stress, especially among design students, by promoting relaxation and improving focus through a meditative or flow state.	Methodology for objective 3 - would be achieved by a) Participants will be introduced to Mandala art creation through workshops. They will be encouraged to create Mandala art regularly over a fixed period, allowing for practice and exposure to the activity. b) After the intervention period of the workshop, participants will complete the psychological control questionnaire survey. Any changes in their perceived stress of control will be analysed quantitatively using appropriate statistical methods.	Methodology for objective 4 - would be achieved by an analysis of design students' psychological well-being and their stress-reduction practices will lead to the creation of a practice book for mandala art patterning.
Probable outcome of objective 1. will lead to the following outcome: Understanding of Mandala art's elements and principles, such as motifs, symbols, geometric patterns, and cultural significance. This could be compiled in form of a reference booklet.	Probable outcome of objective 2. will lead to the following outcome: The study will identify which forms of mandala art are most effective in reducing stress. It will help to understand how these art forms can be used to relieve stress, especially for design students.	Probable outcome of objective 3. will lead to the following outcome: This study will consist of detailed three-day workshop plan including schedules, activities, and materials that are needed. It will have ways to measure how well the workshop reduces stress and can be used by	Probable outcome of objective 4 will lead to the following outcome: The workshop will teach design students how to create their own mandalas using geometric patterns and develop their unique design style. It will include feedback from participants, stress assessment results, and suggestions for

		individuals to run similar workshops.	improving the workshop. This will create a clear guide for others to run similar workshops
Viewership (usefulness of outcome) of objective 1 - As designers understand the components and ideas of Mandala art, they can create more believable and culturally significant works of art. Its knowledge is useful for improving and protecting cultural heritage.	Viewership (usefulness of outcome) of objective 2 - This study will help educators, students, and institutions use mandala art to reduce stress, support learning, and encourage creativity. It will also help researchers exploring art therapy's psychological effects.	Viewership (usefulness of outcome) of objective 3 - This workshop will provide policymakers with appropriate guidelines. It will also benefit people looking for creative ways to express themselves and relieve stress, as well as professionals who want to incorporate art therapy and mindfulness techniques into their practices.	Viewership (usefulness of outcome) of objective 4 -Findings of this objectives could be adopted in academics and can help students, teachers and policy makers.

15. References

‘Alexander Chatzigeorgiou , Nikolaos Tsantalis , Ignatios Deligiannis (2007).’An empirical study on students’ ability to comprehend design patterns Volume 51, Issue 3, November 2008, Pages 1007-1016
https://doi.org/10.1016/j.compedu.2007.10.003

Anastasia Babouchkina and Steven J Robbins (2015), Reducing Negative Mood Through mandala Creation: A Randomized Controlled Trial, Art therapy 32(1):34-39, DOI:10.1080/07421656.2015.994428
https://doi.org/10.1080/07421656.2015.994428

Apriyana, R., Widianti, E., & Muliani, R. (2020). The Influence of Mandala Pattern Coloring Therapy Toward Academic Stress Level on First Grade Students at Nursing Undergraduate Study Program. *NurseLine Journal*, *5*(1), 186-194. doi:10.19184/nlj.v5i1.13556 https://jurnal.unej.ac.id/index.php/NLJ/article/view/13556

Buchalter, S. (2012). Mandala Symbolism and Techniques: Innovative Approaches for Professionals. United Kingdom: Jessica Kingsley Publishers. https://www.google.co.in/books/edition/Mandala_Symbolism_and_Techniques/wwf4mNNfSsEC?hl=en&gbpv=1&dq=Mandala+Symbolism+and+Techniques+Innovative+Approaches+for+Professionals+by+Susan+Buchalter&printsec=frontcover

Chaterine Angellim, Monty P. Satiadarma, Untung Subroto (2020, mandala Drawing for Reducing Test Anxiety in College Student published in Conference: The 2nd Tarumanagara International Conference on the Applications of Social Sciences and Humanities (TICASH 2020)**,** DOI:10.2991/assehr.k.201209.069 https://www.atlantis-press.com/proceedings/ticash-20/125948083

Chemi, T. (2016). The experience of flow in artistic creation. In L. Harmat, F. Ø. Andersen, F. Ullén, J. Wright, & G. Sadlo (Eds.), *Flow experience: Empirical research and applications* (pp. 37–50). Springer International Publishing/Springer Nature. https://doi.org/10.1007/978-3-319-28634-1_3

Chen, Hao & Liu, Chao & Zhang, Ayuan & Lu, Wen-Qian & Wu, Kan & Chiou, Wen-Ko. (2024). How flow and mindfulness interact with each other in mindfulness-based augmented reality mandala coloring activities. Frontiers in Psychology. 14. 10.3389/fpsyg.2023.1301531. https://doi.org/10.3389/fpsyg.2023.1301531

Chilton, G. (2013). Art Therapy and Flow: A Review of the Literature and Applications. *Art Therapy*, *30*(2), 64–70. https://doi.org/10.1080/07421656.2013.787211

Dhempe College of Arts & Science. (2023, November). *Mental health week: Day 3 – Mindful moments: Mandala art therapy session*. Department of Psychology and Counselling Cell. https://www.dhempecollege.edu.in/wp-content/uploads/2023/11/MENTAL-HEALTH-WEEK-DAY-3-MINDFUL-MOMENTS-MANDALA-ART-THERAPY-SESSION.pdf

Dokras, Uday. (2021). MANDALA & ARCHITECTURE.
https://www.academia.edu/45015333/MANDALA_and_ARCHITECTURE

Dr. Abeer A Alawad (2014), The Prevalence Of Stress Among Interior Design And Furniture Students, European Scientific Journal 10(23):60-72
https://core.ac.uk/download/pdf/236406577.pdf

Elinor Ulman (2016) 'ART THERAPY', e-book 2016 International Psychotherapy Institute from The Psychotherapy Guidebook, United States of America Copyright 2012.
https://docplayer.net/227075691-Art-therapy-elinor-ulman.html

Hasnida, Hasnida & Meutia, Amalia. (2018). The Effectiveness Mandala Therapy On Coping Stress. 10.2991/icosop-17.2018.45.
https://www.atlantis-press.com/proceedings/icosop-17/25892098

Henderson, P. G. (2016). The role of art therapy in mental health treatment: A case study. *International Journal of Art Therapy*, *21*(1), 20-30.
https://core.ac.uk/download/pdf/9069235.pdf

Jung, C. (1972). Mandala Symbolism: (From Vol. 9i Collected Works). Princeton: Princeton University Press.
https://doi.org/10.1515/9781400886043

Kathleen Quinn (2018), 'The Quest For Self: Using M The Quest For Self: Using mandala Art In Reflect In Reflective Practice Journaling' Comparative Woman: Vol. 1: Iss. 1, Article 2. DOI: 10.31390/comparative woman.1.1.01
https://repository.lsu.edu/cgi/viewcontent.cgi?article=1001&context=comparativewoman

Kim, S. M. (2008). The relationship between form and formlessness in MANDALAS (Master's thesis). Jawaharlal Nehru University.
https://shodhganga.inflibnet.ac.in:8443/jspui/handle/10603/14675

Krzysztofik, Małgorzata & Zbróg, Piotr. (2020). Proposing a Workshop on Art Evaluation in University Teaching. Respectus Philologicus. 195-204. 10.15388/RESPECTUS.2019.37.42.50.
https://www.journals.vu.lt/respectus-philologicus/article/view/17068

Lapum, Jennifer & Owusu, Karen & Tan, Andy & Rattan, Simran & Nguyen, Phung & Simoni, Einav & Lee, Charlotte. (2017). Mandala making to foster understanding of theoretical concepts in nursing education: Stress and coping. Journal of Nursing Education and Practice. 7. 22. 10.5430/jnep.v7n7p22.
https://www.sciedupress.com/journal/index.php/jnep/article/view/10558/6757

Lara Petersen (2018), 'What is a Mandala? Explore the Symbols of the Universe', published in Abury foundation.
https://abury.net/blogs/abury-blog/mandala-explore-symbols-universe.

Li, Juanjuan & Wu, Bo. (2020). The Application of Mandala Drawing in Psychological Education in Universities. 10.2991/assehr.k.201128.105.
https://www.atlantis-press.com/proceedings/icesei-20/125946962

Liu C, Chen H, Liu C-Y, Lin R-T and Chiou W-K (2020) Cooperative and Individual Mandala Drawing Have Different Effects on Mindfulness, Spirituality, and Subjective Well-Being. *Front. Psychol.* 11:564430. doi: 10.3389/fpsyg.2020.564430
https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2020.564430/full

Lorentzsen, Kristine, "The Mandala as Response Art: A Method for Centering, Containing, and Exploring" (2019). *Expressive Therapies Capstone Theses*. 130.
https://digitalcommons.lesley.edu/expressive_theses/130

Maryellen McAlevey (2014). 'Mandalas and Wellness Wheels with Persons with Severe Mental Illness', published in Journal of Art for life, Vol. 5 No. 1 (2014): Spring 2014
https://journals.flvc.org/jafl/article/view/84269

Milan Shakya (2017), Basic Concept of mandala 88, Voice of History, Vol. XV, No.
https://www.academia.edu/26655354/Basic_Concepts_of_Mandala.

Prathikanti, S. (2020). Mandala therapy: Art of centering the self. Healing Arts Press. https://osherminimed.ucsf.edu/sites/g/files/tkssra781/f/wysiwyg/06.10_Prathikanti_Mandala Therapy.pdf

Raimaini, Nur & Zahit, Ross. (2023). Exploring Mandala – Art as a Form of Therapy. Trends in Undergraduate Research. 6. e1-7. 10.33736/tur.5986.2023. https://publisher.unimas.my/ojs/index.php/TUR/article/view/5986

Sally Schofield (2019), 'Group Art therapy, Aesthetic Experiences of Difference and Belonging' published in Language and Psychoanalysis 8(1):1-39 DOI:10.7565/landp. v8i1.1591 https://journals.ed.ac.uk/languageandpsychoanalysis/article/view/2984

Shah, K., & Borkar, P. (2021). *Effect of mandala art on psychological well-being among physiotherapy undergraduates of age 18-22 years*. Dr. A.P.J. Abdul Kalam College of Physiotherapy, Pravara Institute of Medical Sciences 'Deemed to be' University, Loni, Maharashtra, India. https://medicopublication.com/index.php/ijpot/article/view/16162/14462

Sheth, A. (2021). Mandalas for self-expression & healing. Art Therapy Press. https://www.scribd.com/document/750032817/20210115101431

Shimizu, Daichi & Yomogida, Ibuki & Wang, Shijun & Okada, Takeshi. (2021). Exploring the Potential of Art Workshop: An Attempt to Foster People's Creativity in an Online Environment. Creativity Theories – Research – Applications. 8. 89-107. 10.2478/ctra-2021-0007. https://sciendo.com/article/10.2478/ctra-2021-0007

Singh, Aditya & Das, Vinay & Garg, Yogesh & Kamal, Mohammad Arif. (2022). Investigating Architectural Patterns of Indian Traditional Hindu Temples through Visual Analysis Framework. Civil Engineering and Architecture. 10. 513-530. 10.13189/cea.2022.100211. https://www.hrpub.org/download/20220228/CEA11-14825255.pdf

Sneha, T. M., & Lucas, P. J. (2024). Mandala art therapy as an intervention for depression, anxiety, stress, and resilience among university students. *International Journal of Indian Psychology*, *12*(1), 699-710. DOI: 10.25215/1201.066
https://ijip.in/pdf-viewer/?id=42950

Tae Hoo Kim, Emelia Ong Ian Li (2018), mandala Art therapy: Intervention for Individual With Autism Spectrum Disorder (ASD), Journal Psikologi Malaysia 32 (1) (2018): 97-113 ISSN-2289-8174
https://spaj.ukm.my/ppppm/jpm/article/view/285

Tolouian, Audrey. (2021). Mandalas in the Nursing Classroom. Online Journal of Complementary & Alternative Medicine. 6. 10.33552/OJCAM.2021.06.000632.
https://scholarworks.utep.edu/cgi/viewcontent.cgi?article=1053&context=nursing_papers

Van Gordon, William & Shonin, Dr Edo & Garcia-Campayo, Javier. (2017). Van Gordon, W., Shonin, E., & García-Campayo, J. (2017). The mandala of the present moment. Mindfulness, Advanced Online Edition, DOI: 10.1007/s12671-017-0779-x.. Mindfulness.
https://link.springer.com/article/10.1007/s12671-017-0779-x

Vidović, P., & Rupčić, S. (2024). Mandala patterns in nature: Incentives for artistic expression and possible development of the intuitive nature of awareness in a preschool child. Kindergarten Mali princ & University of Zagreb, Faculty of Teacher Education.
https://cje2.ufzg.hr/ojs/index.php/CJOE/article/view/3453

Walker, Craig Weston, "Literature as mandala" (1994). Graduate Student Theses, Dissertations, & Professional Papers. 2855.
https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=3874&context=etd

Xie, G.-H., & Wang, Q. (2021). Mandala Coloring as a Therapeutic Tool in Treating Stress-Anxiety-Depression Syndrome. Asian Journal of Interdisciplinary Research, 4(4), 30–36.https://doi.org/10.54392/ajir2144
https://journals.asianresassoc.org/index.php/ajir/article/view/674

Yokochi, Sawako & Okada, Takeshi. (2020). The Process of Art-making and Creative Expertise: An Analysis of Artists' Process Modification. The Journal of Creative Behavior. 55. 10.1002/jocb.472.
https://onlinelibrary.wiley.com/doi/10.1002/jocb.472

Signature:

Date:

Name of Scholar: Mr. Sanil Bhawle

Signature:

Date:

Name of Guide: Dr. Bhavesh Shah